

WHAT IS CLAIMED IS:

Sub (B)
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1. A plant containing a plant cell comprising a first and a second expression cassette located at the same locus on each of two homologous chromosomes, wherein:

the first expression cassette present on a first chromosome homolog comprises a first plant promoter operably linked to a first polynucleotide sequence encoding a first polypeptide, wherein a recombinase site is present between the first promoter and the first polynucleotide sequence;

the second expression cassette present on a second chromosome homolog comprises the first plant promoter inoperably linked to the first polynucleotide sequence, wherein an intervening expression cassette is flanked by two recombinase sites and situated between the first promoter and the first polynucleotide sequence of the second expression cassette, the intervening expression cassette comprising a second plant promoter operably linked to a second polynucleotide sequence encoding a second polypeptide; and

wherein the presence of the first and second polypeptides in a cell is lethal to the cell.

2. The plant of claim 1, wherein the recombinase sites are *lox* sites.

3. The plant of claim 1, wherein the first polypeptide is a transactivator protein.

4. The plant of claim 1, wherein the intervening expression cassette is in reverse orientation with respect to the second expression cassette.

5. The plant of claim 3, wherein the second polypeptide is lethal to plant cells.

6. The plant of claim 5, wherein the second polypeptide is a ribonuclease.

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7. The plant of claim 6, wherein the ribonuclease is Barnase.

8. The plant of claim 1, wherein the first polypeptide is an avirulence gene product derived from a plant pathogen and the second polypeptide is a resistance gene product associated with the avirulence gene.

9. The plant of claim 8, wherein the first polypeptide is AVR9.

10. The plant of claim 9, wherein the second polypeptide is CF9.

11. The plant of claim 1, wherein the first or the second promoter is a tissue-specific promoter.

12. The plant of claim 1, wherein the first and second promoters are each functional in tapetal cells.

13. The plant of claim 1, wherein the first and second polypeptides each comprise a separate subsequence of a single functional polypeptide.

14. A method of modifying cellular function in a plant, the method comprising the steps of:

introducing into a plant a first expression cassette comprising a first plant promoter operably linked to a first polynucleotide encoding a first polypeptide, wherein a recombinase site is present between the first promoter and the first polynucleotide;

introducing into the plant a second expression cassette comprising the first plant promoter inoperably linked to a polynucleotide encoding the first polypeptide, wherein an intervening expression cassette is flanked by recombinase sites and situated between the first promoter and the first polypeptide of the second expression cassette, the intervening expression cassette comprising a plant promoter operably linked to a polynucleotide encoding a second polypeptide; and

wherein the presence of the first and second polypeptides in a cell is lethal to the cell.

15. The method of claim 14, wherein the two expression cassettes are introduced through a sexual cross and the two expression cassettes are present on chromosome homologs.

5 16. The method of claim 14, wherein the recombinase sites are *lox* sites.

10 ~~17. The method of claim 14, wherein the first polypeptide is a transactivator protein.~~

18. The method claim 14, wherein the intervening expression cassette is in reverse orientation with respect to the second expression cassette.

15 ~~19. The method of claim 17, wherein the second polypeptide is lethal to plant cells.~~

~~20. The method of claim 19, wherein the second polypeptide is a ribonuclease.~~

20 21. The method of claim 20, wherein the ribonuclease is Barnase.

22. The method of claim 14, wherein the first polypeptide is an avirulence gene product derived from a plant pathogen and the second polypeptide is a resistance gene product associated with the avirulence gene.

25 ~~23. The method of claim 22, wherein the first polypeptide is AVR9.~~

~~24. The method of claim 23, wherein the second polypeptide is CF9.~~

30 25. The method of claim 14, wherein the first or the second promoter is a tissue-specific promoter.

26. The method of claim 14, wherein the first and second promoters are each functional in tapetal cells.

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27. The method of claim 14, wherein the first and second polypeptides
5 each comprise a separate subsequence of a single functional polypeptide.

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